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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,699

02/03/2006

Gianni Sava

NOTAR-031US

3882

7663

7590

03/16/2009

STETINA BRUNDA GARRED & BRUCKER  
75 ENTERPRISE, SUITE 250  
ALISO VIEJO, CA 92656

EXAMINER

WESTERBERG, NISSA M

ART UNIT

PAPER NUMBER

1618

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,699	<b>Applicant(s)</b> SAVA ET AL.	
	<b>Examiner</b> Nissa M. Westerberg	<b>Art Unit</b> 1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3 - 5, 29, 31 - 33, 37, 39 - 48, 50 - 55 is/are pending in the application.
- 4a) Of the above claim(s) 37, 39 - 48, 50 - 55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 - 5, 29, 31 - 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

Applicants' arguments, filed December 12, 2008, have been fully considered but they are not deemed to be fully persuasive. The following rejections and/or objections constitute the complete set presently being applied to the instant application.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3, 4, 29, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (J Microencapsulation 2003) in view of Illum (US 5,690,954). This rejection is MAINTAINED for the reasons of record set forth in the Office Action mailed July 14, 2008 and those set forth below.

Applicant traverses this rejection on the grounds that Lee discloses alginate coated microspheres or blended with HPMC, EUDRAGIT® or chitosan, as alternative methods of preparing controlled release drug delivery system based on alginate microspheres and the polymers are equivalent possible alternatives. This understanding is further supported by the fact that release is very similar from HPMC-blended alginate microspheres and chitosan-coated microspheres. As Lee et al. teaches that HPMC-blended microspheres give a useable result, the combination of the two (blending HPMC with alginate and coating the alginate-HPMC microsphere with chitosan) is not taught or suggested as giving a better result and there is a reasonable expectation that the presence of two different barriers would impair drug release. The divalent ion functions as a gellification agent. In regards to Illum, Applicant argues that Illum discloses a drug delivery system including an absorption-enhancing material to increase

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bioavailability and only incidentally considers lysozyme as a possible bioactive compound. Applicant submits that the teaching of Illum is limited to the addition of microspheres of an absorption enhancing material to increase the bioavailability of the drug contained in the microsphere.

These arguments are not found to be persuasive. Applicant has stated that drug release from the singular embodiments presented in Lee et al. for HPMC-blended alginate microspheres in figure 4 and the chitosan-coated alginate microspheres in figure 7. While the presence of both of these layers could alter the drug release profile slightly, both formulations clearly allow for drug release and therefore there is no evidence to support the assertion that one of ordinary skill in the art would not have reasonable expectation of success that such a composition would release the drug. For this reason, and the fact that the claims are drawn to a composition with no functional language requiring a particular release profile, this argument is not persuasive. As set forth in the Office Action, blending HPMC with the alginate allows for linear drug release and the outer chitosan layer provides for a more spherical shape to the particles, and the combination of these two, even if the combination was not explicitly contemplated by Lee et al., would be envisioned by one of ordinary skill in the art. The presence of divalent calcium ion is taught by Lee et al. and therefore this limitation is met, even though Lee et al. does not describe the divalent ion as a "gellification agent". Merely because Illum provides a long list of substances that can be encapsulated in the microsphere, it does not negate the teaching of Illum that lysozyme is a substance which can be encapsulated and be delivered using a microsphere.

5. Claims 1, 3 – 5, 29 and 31 – 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. and Andrianov et al. (US 5,529,777) further in view of Huang et al. (US 2003/0074700). This rejection is MAINTAINED for the reasons of record set forth in the Office Action mailed July 14, 2008 and those set forth below.

Applicant traverses this rejection on the grounds relating to Lee et al. discussed above. Andrianov does not overcome the deficiencies of Lee as Andrianov discloses alginate microspheres as soluble polymer for the delivery of an antigen associated with an adjuvant. Thus, Andrianov is directed towards a system for delivering active substances and not to the active substances to be delivered and is merely an alternative drug delivery system. Even if Andrianov could be combined with Lee, which has not been admitted, it would not be obvious to achieve the results obtained by the instant invention. In regards to Huang et al., Applicant states that Huang et al does not appear to be a relevant document as it is outside the field as it relates to food and food additive compositions and that the lysozyme properties discussed in Huang are well known to a person having ordinary skill in the art and has been widely studied and used in therapy as an antiviral since its discovery in 1922.

These arguments are not found to be persuasive. As both Lee et al. and Andrianov disclose pharmaceutical compositions based on alginate microspheres, the teachings of the two references can be combined. When combined, Lee et al. and Andrianov show that an adjuvant and an antigen are suitable biologically active substances to be encapsulated in an alginate-based microsphere. Andrianov does not

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specifically disclose that lysozyme can be used as the adjuvant component in the composition, a deficiency which is cured by Huang et al. While Huang et al. may not be directed towards microspheres, the teachings about the properties of lysozyme are relevant as the properties of a molecule are inseparable from the molecule itself.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. This application contains claims 37, 39 – 48 and 50 – 55 drawn to an invention nonelected with traverse in the reply filed on May 22, 2008. A complete reply to the

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final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nissa M. Westerberg whose telephone number is (571)270-3532. The examiner can normally be reached on M - F, 8:00 a.m. - 4 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/  
Supervisory Patent Examiner, Art Unit 1618

NMW